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Docket No. AUS92001825US1 Serial No. 10/015.266 Atty: AJPApplicant: BROWN ET AL

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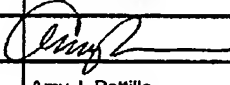
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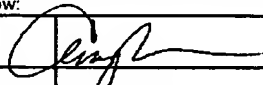
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TRANSMITTAL FORM <small>(to be used for all correspondence after initial filing)</small>	Application Number	10/015,382
	Filing Date	12/12/2001
	First Named Inventor	Michael Wayne Brown
	Art Unit	2642
	Examiner Name	Al Aubaldi, Rasha S
	Attorney Docket Number	AUS920010827US1
Total Number of Pages in This Submission		

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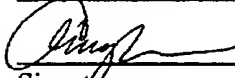
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of Michael Wayne Brown, et al.	: Before the Examiner:
Serial No.: 10/015,266	: Marie C. Ubiles
Filed: 12/12/2001	: Group Art Unit: 2642
Title: HOLD QUEUE WAIT	: IBM Corporation (AP)
ESTIMATES	: c/o Amy J. Pattillo
Atty Docket: AUS920010825US1	: P.O. Box 161327
	: Austin, Texas 78716

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**RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF
(37 CFR 41.37)**

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Applicants received an action on 7/14/2005 with an "attachment" indicating a defective appeal brief in application 10/015,266. The attachment states:

The Advisory Action mailed on November 24, 2004 stated under item 2 that the proposed amendment will not be entered and provided explanation (see box 2(a) and also the attachment to the Advisory Action). Box 2(a) stated: "they raise new issues that would require further consideration and/or search (see NOTE below)" and the attachment stated: "Applicant introduced new issues in claims 1, 14, 25, and 37-45 that require further consideration and search from the Examiner."

However, in the same Advisory Action, Examiner inadvertently checked box 7(b) instead of 7(a). Applicant should have determined that box 7(b) contradicts the Examiner's position as clearly explained in the Advisory.

A telephone call to the Examiner would have removed any potential for confusion. Examiner regrets this typographical error (checking box 7(b) instead of box 7(a)), however, the fact remains that the claims after final raise new issues and have not been entered.

The "attachment" dated 7/14/25 did not indicate what reply date the Examiner allowed, if any, for reply. On 7/20/25, Applicants' representative contacted supervising Examiner Matar to determine if a time for correcting the non-compliance would be allowed. Examiner Matar responded that the first page of the response was not included in the original mailing, but the page should have been included. A second action, dated 7/28/2005, from Examiner Matar, included a "notification for non-compliant appeal brief" that specifies a compliance date of one month or thirty days from the mailing date of the notification, whichever is longer. Additionally, the notification dated 7/28/05 indicates specific grounds for noncompliance of "The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii))."

First, Applicants respectfully assert that because Examiner Ubiles issued an Advisory Action that entered the amendment for purposes of appeal, Applicants relied on the Examiner's action and therefore the appeal brief submitted on 1/31/2005, which includes those claims last presented to the Examiner in an amendment dated 10/26/2004, contains the correct claims in the appendix. In the Advisory Action, Examiner Ubiles selected option 7(b), where option 7(b) states "For purposes of appeal, the amendments will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended." While the Examiner now supposes, in hindsight, that Applicant should have corrected the Examiner's selection by determining that the Examiner's positions between 2(a) and 7(b) were contradictory and calling the Examiner, the fact remains that the Examiner issued the Advisory Action entering the amendment and Applicants relied on the entry. Further, Applicants note that the Examiner did not just "inadvertently" check box 7(b) instead of 7(a), but the Examiner also stated that the status of the claims would be: "claim(s) allowed: 31-33; claim(s) rejected: 1-32 and 34-45." [Advisory Action dated 11/24/2004] Applicants relied on the Examiner's status of the claims for purposes of appeal, which include claims 37-45 which were newly added in the amendment after final dated 10/26/2004; if the Examiner intended to clearly indicate that the amendment was not entered, then newly added claims 37-45 would not be included in the listing of rejected claims for purposes of amendment. Further, Applicants assert that it is not readily apparent from the Advisory Action or the Examiner's assertions in the attachment dated 7/14/05 that a selection of both 2(a) and

7(b) in an advisory action is contradictory. Therefore, in view of the foregoing, Applicants respectfully request entry of the appeal brief filed 1/31/2005.

In the alternative, should the Examiner maintain that the appeal brief of 1/31/2005 is non-compliant, Applicants submit this response with appeal brief modified to comply with the notification of non-compliant appeal brief. First, the appeal brief includes a copy of the appealed claims in the appendix showing the claims as they stood prior to the amendment after final. In addition, for purposes of clarification, Applicants submit this appeal brief with the arguments modified to remove references to the claims as submitted in the appeal brief filed 1/31/2005. Applicants respectfully request that if the Examiner's previous grounds for non-compliance are maintained, that the attached compliant appeal brief replace the appeal brief dated 1/31/2005.

Respectfully submitted,

 ^{AST}
8/24/05

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Atty Docket No. AUS920010825US1

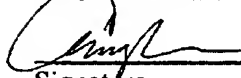
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of Michael Wayne Brown, et al. Serial No.: 10/015,266 Filed: 12/12/2001 Title: HOLD QUEUE WAIT ESTIMATES Atty Docket: AUS920010825US1	: Before the Examiner: : Marie C. Ubiles : Group Art Unit: 2642 : IBM Corporation (AP) : c/o Amy J. Pattillo : P.O. Box 161327 : Austin, Texas 78716
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**SUBSTITUTE APPEAL BRIEF IN RESPONSE TO NOTICE OF NON-
COMPLIANT APPEAL BRIEF**
(37 CFR 41.37)

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This present substitute appeal brief is submitted in response to a notice of non-compliant appeal brief dated July 28, 2005. The original appeal brief was filed on January 31, 2005. This is an appeal from a final rejection dated August 27, 2004 and an advisory action dated November 24, 2004 of Claims 1-5, 7-18, 20-26, 28-30, and 34-36 of application serial number 10/015,266, filed December 12, 2001.

I. Real Party in Interest

The real party in interest in the present application is the Assignee, International Business Machines Corporation of Armonk, New York, as evidenced by the Assignment set forth at Reel 012380, Frame 0906.

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Atty Docket No. AUS920010825US1

II. Related Appeals and Interferences

Related US Patent Application Serial No. 10/005,680 and related US Patent Application Serial No. 10/015,383 are concurrently pending appeal. There are no additional Appeals or Interferences known to Appellant, Appellant's legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. No decisions have been rendered by a court or the Board in the related applications.

III. Status of Claims

Claims 1-5, 7-18, 20-26, 28-30, and 34-36 are finally rejected and are being appealed; claims 31-33 are allowed; claims 6, 19, and 27 are cancelled. In particular, claims 1-5, 7-18, 20-26, 28-30, and 34-36 stand finally rejected as noted by the Examiner in the Examiner's Action dated August 27, 2004. These rejected claims which form the basis of this appeal are reproduced in the attached Appendix.

IV. Status of Amendments

A response after final office action was submitted on October 26, 2004 including amendments to claims 1, 14, 25, and 32 and newly added claims 37-45. Newly added claims 37-45 are dependent upon allowed claims 31-33. In the Advisory Action, dated November 24, 2004, following the response after final office action, the Examiner entered the amendments after final for purposes of appeal. The Advisory Action set the status of the claims, for purposes of appeal, to claims 31-33 allowed and claims 1-32 and 34-45 rejected. Later, in a notification of non-compliant appeal brief dated July 28, 2005, the Examiner reversed the entry of the amendments after final for purposes of appeal and indicated that the amendments in claims 1, 14, and 25 and the newly added claims 37-45 had not been entered. The claims now presented in the appendix match the claims presented in the response dated June 15, 2004.

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V. Summary of Claimed Subject Matter

Claims 1, 14 and 25

Claim 1 discloses a method for estimating and publishing a caller's remaining wait time in a call hold queue of a call center (Specification, page 8, lines 3-5, Figures 2 and 3, element 42, Figure 5, element 82). In particular, a call center receives multiple calls, where each caller associated with each of the multiple calls is identified by an authenticated caller identifier (Specification, page 8, lines 19-21, page 18, lines 20-26, page 24, lines 12-13, page 25, lines 2-5, Figure 6, Figure 7, element 132). The call center then retrieves a caller profile associated with each authenticated caller identifier, where each caller profile indicates a previous call center usage history for that caller (Specification, page 8, lines 19-26; page 29, lines 19-27, Figure 3, element 68, Figure 8, elements 146, 148, and 150). The call center estimates call times for each call currently within the call center based on each caller's previous call center usage history (Specification, page 36, line 28 through page 37, line 11, Figure 5, element 84). The call center positions a particular call within a hold queue and estimates a wait time in the hold queue for the particular call according to the call times individually estimated for the multiple calls currently within the call center (Specification, page 4, lines 20-23; page 29, lines 11-17, page 29, line 29 through page 30, line 6, page 30, line 29 through page 31, line 2, page 34, line 25 through page 36, line 26, Figure 5, element 84, Figure 8, elements 144 and 160). In publishing the estimated wait time, the call center adjusts a selection of an output interface to which the wait time is output based on an amount of time remaining in the estimated wait time (Specification, page 9, lines 2-10, page 26, lines 9-20; page 27, lines 7-24, page 32, lines 12-20, Figure 4, element 80, Figure 8, elements 166 and 168).

Claim 14 discloses a system with means for performing the elements described in claim 1. In particular, Figure 2 illustrates a call center 16 that includes a hold queue 70 in hold system 42 with means for performing the elements described in claim 1 (Specification, page 25, lines 10). On hold system 42 accesses caller profiles from caller profile server 50 of Figure 2 or from data storage system 62 of Figure 3 (Specification, page 27, lines 2-5).

Claim 25 discloses a computer program product for performing the steps

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described in claim 1. In particular, the specification describes that while the invention is described with reference to a data processing system, the computer readable medium of Claim 25 is taught where the recordings, which are the means for performing the elements of claim 1, can all be distributed through a "computer readable medium of instructions and a variety of forms" (Specification, page 43, lines 10-18). Examples of a recording medium include:

"recordable-type media, such as a floppy disk, a hard disk drive, a RAM, CD-ROMs, DVD-ROMs, and transmission-type media, such as digital and analog communications links, wired or wireless communications links using transmission forms, such as, for example, radio frequency and light wave transmissions" (Specification, page 43, lines 18-23).

In addition, the recording medium may "take the form of coded formats that are decoded for actual use in a particular data processing system" (Specification, page 43, lines 23-26).

Claim 12

Claims 12 discloses a method for estimating wait times at a call center. (Specification, page 8, lines 3-5). A call center receives multiple calls identified by authenticated caller identifiers (Specification, page 8, lines 19-21, page 18, lines 20-26, page 24, lines 12-13, page 25, lines 2-5, Figure 6, Figure 7, element 132). The call center also receives multiple caller profiles associated with the authenticated caller identifiers, where each caller profile includes a time average for each caller while previously on hold at at least one call center (Specification, page 8, lines 19-26; page 29, lines 19-27, page 34, lines 22-27, Figure 2, element 50, Figure 3, element 68, Figure 8, elements 146, 148, and 150). The call center then estimates a wait time for a particular caller from among the multiple callers waiting in a hold queue of the call center according to the time averages for the other callers (Specification, page 4, lines 20-23; page 29, lines 11-17, page 29, line 29 through page 30, line 6, page 30, line 29 through page 31, line 2, page 34, line 25 through page 36, line 26, Figure 5, element 84, Figure 8, elements 144 and 160).

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VI. Grounds of Rejection to be Reviewed on Appeal

1. Claims 1-5, 7-18, 20-26, 28-30, and 34-36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shtivelman (US Patent Number 6,157,655) in view of Duncan et al. (US Patent Publication Number 2002/0141561) and further in view of Barber et al. (US Patent Number 6,088,435).

VII. Argument

1. **35 U.S.C. 103(a), Alleged Obviousness, Claims 1-5, 7-18, 20-26, 28-30, and 34-36**

Claims 1-5, 7-11, 14-18, 20-26, 28-30 and 34-36

The Final Office Action rejects claims 1, 14 and 25 under 35 U.S.C. 103(a) as being allegedly unpatentable over Shtivelman (US Patent Number 6,157,655) in view of Duncan et al. (US Patent Publication Number 2002/0141561) and further in view of Barber et al. (US Patent Number 6,088,435). [Final Office Action, dated August 27, 2004, pp. 2, 6] In addition, in an Advisory Action, the Examiner rejects claims 1, 14, and 25, as amended after the Final Office Action, as adding new issues that would require additional consideration and search from the Examiner. The rejections are respectfully traversed.

Independent method claim 1, which is representative of independent system claim 14 and independent computer program product claim 25, with regard to similarly recited subject matter, reads as follows:

1. A method for estimating wait times within a hold queue comprising:
 - receiving a plurality of calls at a call center, wherein each caller associated with a call from among said plurality of calls is identified by an authenticated caller identifier;
 - retrieving, for each caller according to said authenticated caller identifier, a caller profile from among a plurality of caller profiles, wherein each of said plurality of caller profiles indicates a previous call center usage history for each said caller;
 - estimating a plurality of call times individually for each of said plurality of calls within a call center based on said previous call center usage history for each said caller;

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positioning a particular call received from a particular caller at said call center within a hold queue; and
estimating a wait time in said hold queue for said particular call according to said plurality of call times individually estimated for said plurality of calls within said call center.

The Examiner carries the burden of proving a prima facie case of obviousness for a 103(a) rejection. In particular, in establishing a prima facie case of obviousness under 103(a), the combined prior art references must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.3d 488, 20 USPQ2d 1438 (Fed Cir. 1991). Appellants respectfully assert that the Examiner does not show and the references do not teach or suggest, separately or in combination, estimating a plurality of call times individually for each of said plurality of calls within a call center based on said previous call center usage history for each said caller or adjusting a selection of an output interface to which said wait time is output based on an amount of time remaining in said wait time, wherein at a first amount of time remaining in said wait time said wait time is output to a first output interface and at a second amount of time remaining in said wait time said wait time is output to a second output interface.

In particular, in the final office action, the Examiner rejects the elements of Claims 1-5, 7-11, 14-18, 20-26, 28-30 and 34-36 under 35 U.S.C. §103(a) as being unpatentable over Shtivelman (US Patent Number 6,157,655) in view of Duncan et al. (US Patent Publication Number 2002/0141561) and further in view of Barber et al. (US Patent Number 6,088,435). [Final Office Action, p. 2] In particular, the Examiner cites Shtivelman as teaching the elements of “estimating a plurality of call times individually for each of said plurality of calls within a call center”, “positioning a particular call received from a particular caller at said call center within a hold queue”, and “estimating a wait time in said hold queue for said particular call according to said plurality of call time individually estimated for said plurality of calls within said call center.” [Final Office Action, pp. 2-3] The Examiner cites Shtivelman’s system as lacking teachings of the other elements of claims 1, 14, and 25 of “receiving said plurality of calls at a call center, wherein each call associated with a call from among said plurality of calls is identified by an authenticated caller identifier”, “retrieving, for each caller according to said authenticated caller identifier, a caller profile from among a plurality of caller

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profiles, wherein each of said plurality of caller profiles indicates a previous call center usage history for each said caller”, and wherein estimating a plurality of call times “is based on said previous call center usage history for each user.” [Final Office Action, p. 3] However, in the rejection of claims 1, 14, and 25, the Examiner cites the teachings of Duncan et al. in paragraphs 0017, 0021, lines 5-10, and 0036 lines 1-4, which read as follows:

“The call evaluation submodule uses algorithms and models provided by a modeling module that analyzes inbound call histories to forecast outcomes of pending incoming calls. It utilizes the forecasts to compute priority values. For example, in the modeling module, performing logistic regression on prior inbound calls using caller and/or call information and prior call history as independent (or predictive) variables and a dependent variable of caller attrition, provides a model that forecasts pending inbound caller attrition based on the caller and/or call information. Alternatively, performing linear regression modeling on prior inbound calls, using caller and/or call information as independent (or predictive) variables and a dependent variable of connect time, provides a model that forecasts the expected agent talk time for each incoming call. [...] Incoming calls accepted by a call receiving device, such as an ACD or VRU, provide calling information, such as DNIS information or account information provided by the caller, to allow evaluation of the value of the customer, such as an estimation of probable future customer behavior. [...] Inbound telephone call receiving device 20 accepts inbound telephone calls through interface 22 and obtains caller information associated with the inbound calls such as ANI or DNIS information. When receiving device 20 includes a VRU, additional caller information, such as account information, is obtained through automated interaction with the inbound callers.” [Final Office Action, pp. 3-4]

The Examiner also cites Barber et al. as teaching a record stored in association with a subscriber identifier. [Final Office Action, p. 4] Then, the Examiner concludes that: “it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify Shtivelman’s system by adding the features of caller prior call history retrieval based on ANI, DNIS, or account information and use a described caller prior call history to estimate a wait time of a caller” to “provide a system that will allow agents to respond to customers that are more sensitive to holding time before responding to customers who are less sensitive to holding time.” [Final Office Action, pp. 4-5]

First, Shtivelman and Barber et al. lack the teaching of claim 1 of estimating call times individually for each call based on the previous call center usage history for each

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caller. In the only reference cited by the Examiner related to the estimation of time, Duncan et al., in paragraph 0017, teaches:

“Alternatively, performing linear regression modeling on prior inbound calls, using caller and/or call information as independent (or predictive) variables and a dependent variable of connect time, provides a model that forecasts the expected agent talk time for each incoming call.”

Thus, Duncan teaches using a prior inbound call history to build a model for forecasting the expected agent talk time for each incoming call, which the Examiner equates to teaching “use of the caller prior call history to estimate a wait time of a caller (or estimation of probable customer behavior).” [see Final Office Action, pp. 4-5]

Forecasting an expected agent talk time for each incoming call based on a forecasting model, however, does not teach or suggest estimating an individual call time for each current caller based on the actual previous call center usage history of each caller. In particular, in determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.

Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983);
Schenck v. Nortron Corp., 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983).

Appellants assert that when viewed as a whole, Duncan et al. teaches a system for forecasting outcomes of pending income calls that depends on forecasted outcomes and queue based performance which teaches away from estimating the call time of each caller based on the previous call center usage history of the actual callers currently received at the call center. In particular, Duncan et al. teaches a system for forecasting outcomes of pending incoming calls, where an outcome is focused on whether the caller is predicted to place and order, and then prioritizing calls in the hold queue for response by agents based on the anticipated outcome (Duncan et al., paragraphs 0011, 0012, and 0021).

Paragraph 0023 of the specification of Duncan et al. highlights that

“an important technical advantage of the present invention is that forecasted outcomes are available with minimal caller information. Generally the identity and purpose of inbound calls are difficult to discern because little information is available regarding the inbound caller. The use of statistical analysis of historical inbound calling data allows accurate modeling of outcomes with minimal knowledge of the identity and purpose of the inbound caller.”

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Thus, in the Duncan et al. system, because identifying the caller is cited as the problem, the advantage or solution of Duncan et al. is modeling and forecasting using statistical analysis of historical inbound call information without knowledge of current inbound callers, rather than making estimates of call times based on the call center histories of current callers to the call centers. Duncan et al. does not teach estimating individual call times for each caller based on individual call histories for each caller. In contrast, the claimed invention teaches receiving authenticated caller identifiers with each call and accessing caller profiles with previous call center usage for each authenticated caller identity, and then estimating call times for each caller based on the caller's previous call center usage.

In addition, Appellants assert that when viewed as a whole, it would not have been obvious for a person of ordinary skill in the art at the time the invention was made to modify the combined teachings of Shtivelman and Duncan et al., because both Shtivelman and Duncan et al. specifically teach away from estimating call center usage based on retrieved individual call histories for each of the callers in the call center. First, when viewed as a whole, the claimed invention teaches first estimating individual call times for each caller with a call at the call center based on each caller's previous call center usage history and then estimating the hold time for another caller based on the estimated call times for other current callers. The Examiner relies on Duncan et al. to teach the first step, however, even if Duncan et al. teaches estimating a call time, that call time is based on forecasted models, not based on individual previous call center usage history of other callers with calls within the call center as taught by the claimed invention. Then, because Duncan et al. teaches away from estimating call times based on the previous call center usage history of current callers, modifying the Shtivelman system that estimates wait times based on the performance of the hold queue and its representatives with the system of Duncan et al. that teaches the advantage of using forecasted outcomes, would not teach estimating the hold time for a particular call in the hold queue according to the call times individually estimated for the other calls within the call center; neither Shtivelman nor Duncan et al. suggest a system where estimated wait times are based on retrieved individual call histories for each other caller in the call center.

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In conclusion, Appellants urge that Duncan et al. fails to teach or suggest estimating a call time individually for each caller based on the previous call center usage history of each caller. A prima facie case of obviousness under 103(a) is not established for claims 1, 14, and 25 because the combined references of Shtivelman, Duncan et al. and Barber et al. fail to teach or suggest at least one element in claims 1, 14, and 25. Because a prima facie case of obviousness under 103(a) is not established for the claims 1, 14, and 25, Appellants respectfully request allowance of claims 1, 14, and 25.

Because prima facie obviousness is not established for claims 1, 14, and 25, at least by virtue of their dependency on claims 1, 14, and 25, neither Shtivelman, Duncan et al., nor Barber et al., either alone or in combination, teaches or suggests the features of dependent claims 2-5, 7-11, 15-18, 20-24, 26, 28-30 and 34-36 under 35 U.S.C. §103(a).

Claims 12 and 13

The Final Office Action rejects claim 12 under 35 U.S.C. 103(a) as being allegedly unpatentable over Shtivelman (US Patent Number 6,157,655) in view of Duncan et al. (US Patent Publication Number 2002/0141561) and further in view of Barber et al. (US Patent Number 6,088,435). [Final Office Action, dated August 27, 2004, p. 6] The rejection is respectfully traversed.

Independent method claim 12 reads as follows:

12. A method for estimating wait times at a call center, comprising:
 - receiving a plurality of calls identified by a plurality of authenticated caller identifiers at a call center;
 - receiving a plurality of caller profiles associated with said plurality of authenticated caller identifiers, wherein said plurality of caller profiles comprise time averages for said plurality of callers while previously on hold at at least one call center; and
 - estimating a wait time for a particular caller waiting in a hold queue from among said plurality of callers according to said time averages for said plurality of callers.

The Examiner carries the burden of proving a prima facie case of obviousness for a 103(a) rejection. In particular, in establishing a prima facie case of obviousness under 103(a), the combined prior art references must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.3d 488, 20 USPQ2d 1438 (Fed Cir. 1991). Appellants respectfully

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assert that the Examiner does not show and the references do not teach or suggest, separately or in combination, the elements of receiving a plurality of caller profiles associated with said plurality of authenticated caller identifier, wherein said plurality of caller profiles comprise time averages for said plurality of callers while previously on hold at at least one call center and estimating a wait time for a particular caller waiting in a hold queue from among said plurality of callers according to said time averages for said plurality of callers

In particular, in the final office action, claims 12 is rejected for the same reasons as claim 1, where claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over Shtivelman (US Patent Number 6,157,655) in view of Duncan et al. (US Patent Publication Number 2002/0141561) and further in view of Barber et al. (US Patent Number 6,088,435). [Final Office Action, p. 6] In merely rejecting claim 12 for the same reasons as claim 1, however, the Examiner fails to prove a prima facie case of obviousness for a 103(a) rejection because the Examiner does not point out how Shtivelman in view of Duncan et al. and Barber et al. teach each of the elements of claim 12, and, in particular does not point to the teachings of Shtivelman in view of Duncan et al. and Barber et al. for the elements of “receiving a plurality of caller profiles associated with said plurality of authenticated caller identifier, wherein said plurality of caller profiles comprise time averages for said plurality of callers while previously on hold at at least one call center” and “estimating a wait time for a particular caller waiting in a hold queue from among said plurality of callers according to said time averages for said plurality of callers.”

First, Shtivelman in view of Duncan et al. and Barber et al. does not teach receiving a plurality of caller profiles associated with said plurality of authenticated caller identifiers, wherein said plurality of caller profiles comprise time averages for said plurality of callers while previously on hold at at least one call center. As previously described, with reference to claim 1, Duncan et al. teaches a model for forecasting agent call times for calls, where the forecasts are based on performing linear regression modeling on prior inbound calls (Duncan et al., paragraph 0017). Paragraph 0018 of Duncan et al. gives specific examples of types of “predictive variables for the logistic and linear regressions equations” as “call information such as the originating number or

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exchange, the originating location, the dialed number, the time of day, and the likely purpose of the call”, “account information derived from association of the originating number and an account data base, or derived from data input by the inbound caller by a VRU”, and “demographic information that may be associated with the call and/or caller”. Thus, Duncan et al. teaches a forecasting system that calculates models and forecasts outcomes and agent wait times based on statistical analysis generated from prior inbound calls, but does not teach or suggest calculating time averages of previous hold times on a caller by caller basis, storing time averages of previous hold times on a caller by caller basis or receiving caller profiles with already calculated time averages per caller based on each caller’s previous hold times. In contrast, claim 12 teaches receiving caller profiles with already calculated time averages per caller, for callers previously on hold at call centers.

Second, Shtivelman in view of Duncan et al. and Barber et al. does not teach estimating a wait time for a particular caller waiting in a hold queue from among said plurality of callers according to said time averages for said plurality of callers. Shtivelman teaches estimating a wait time for a particular caller according to hold queue statistical factors, such as the average time per representative over time (Shtivelman, col. 4, lines 37-48). Shtivelman does not teach estimating a wait time for a particular caller according to time averages of other callers from previous hold times, where the time averages are from previous hold times at at least one call center. In addition, Duncan et al. teaches estimating agent call times based on modeling forecasts (Duncan et al., paragraph 0017); Duncan et al. does not teach estimating a wait time or agent call time based on the already calculated time averages for previous wait times of other callers as accessed from other caller profiles.

Third, Appellants assert that when viewed as a whole, it would not have been obvious for a person of ordinary skill in the art at the time the invention was made to modify the combined teachings of Shtivelman and Duncan et al., because both Shtivelman and Duncan et al. specifically teach away from estimating a wait time for a particular caller in a hold queue based on retrieved individual call histories for each of the other callers in the call center. Duncan et al. teaches away from a current caller history based estimated because it teaches estimating a call time based on forecasted models, not

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based on individually averaged usage of each other caller within the call center as taught by the claimed invention. (Duncan et al., paragraph 0023). Then, because Duncan et al. teaches away from estimating call times based on the time averages of each of the other callers, modifying the Shtivelman system that estimates wait times based on the performance of the hold queue and its representatives with the system of Duncan et al. that teaches the advantage of using forecasted outcomes, would not teach estimating the wait time for a particular call in the hold queue according to the individual averaged wait times for the other callers within the call center; neither Shtivelman nor Duncan et al. suggest a system where estimated wait times are based on retrieved individual time averages for each other caller in the call center.

In conclusion, Shtivelman in view of Duncan et al. and Barber et al. do not teach at least one element of claim 12 from among the receiving step and the estimating step. Therefore, a prima facie case of obviousness under 103(a) is not established for claim 12 because the combined references of Shtivelman, Duncan et al. and Barber et al. do not teach or suggest all of the claim limitations. Because a prima facie case of obviousness under 103(a) is not established for claim 12, Appellants respectfully request allowance of claim 12. In addition, because prima facie obviousness is not established for claim 12, at least by virtue of its dependency on claim 12, neither Shtivelman, Duncan et al., nor Barber et al., either alone or in combination, teaches or suggests the features of dependent claims 13 under 35 U.S.C. §103(a).

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CONCLUSION

It is therefore respectfully requested that the Examiner's rejection of claims 1-5, 7-18, 20-26, 28-30, and 34-36 under 35 USC 103(a) be reversed.

No additional filing fee is believed to be necessary; however, in the event that any additional fee is required, please charge it to IBM Corporation Deposit Account No. 09-0447.

Respectfully submitted,



8/27/05

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VIII. Claims Appendix

1. A method for estimating wait times within a hold queue comprising:

receiving a plurality of calls at a call center, wherein each caller associated with a call from among said plurality of calls is identified by an authenticated caller identifier;

retrieving, for each caller according to said authenticated caller identifier, a caller profile from among a plurality of caller profiles, wherein each of said plurality of caller profiles indicates a previous call center usage history for each said caller;

estimating a plurality of call times individually for each of said plurality of calls within a call center based on said previous call center usage history for each said caller;

positioning a particular call received from a particular caller at said call center within a hold queue; and

estimating a wait time in said hold queue for said particular call according to said plurality of call times individually estimated for said plurality of calls within said call center.

2. The method for estimating wait times within a hold queue according to claim 1, wherein estimating a plurality of call times further comprises:

estimating said plurality of call times according to at least one from among an average time per representative, an average time per caller, and an activity participated in by a selection of said plurality of callers waiting in said hold queue.

3. The method for estimating wait times within a hold queue according to claim 2, wherein said average time per representative is further specified according to at least one from among a time of day and a subject.

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4. The method for estimating wait times within a hold queue according to claim 2, wherein said average time per caller is further specified according to at least one from among an average time with representatives across a plurality of call centers, an average time with a particular representative, an average time for a subject, and an average time of a total call within said call center.

5. The method for estimating wait times within a hold queue according to claim 2, wherein said activity participated in by a selection of said plurality of callers comprises at least one from among a third party call, a competition, a survey, an expert session, and an entertainment service.

6. Canceled.

7. The method for estimating wait times within a hold queue according to claim 1, further comprising:

publishing said wait time to an interface selected by said caller.

8. The method for estimating wait times within a hold queue according to claim 7, wherein publishing said wait time further comprises:

publishing a plurality of criteria utilized to estimate said plurality of call times.

9. The method for estimating wait times within a hold queue according to claim 1, wherein a selection of said plurality of calls are currently waiting in said hold queue.

10. The method for estimating wait times within a hold queue according to claim 1, wherein a selection of said plurality of calls are currently being assisted by a plurality of representatives within said call center.

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11. The method for estimating wait times within a hold queue according to claim 1, further comprising:

updating a caller profile server according to a session for said particular call according to said authenticated identifier for said particular caller, wherein said caller profile server maintains a plurality of caller profiles stored according to a plurality of authenticated identifiers for compiling information about sessions at at least one call center.

12. A method for estimating wait times at a call center, comprising:

receiving a plurality of calls identified by a plurality of authenticated caller identifiers at a call center;

receiving a plurality of caller profiles associated with said plurality of authenticated caller identifiers, wherein said plurality of caller profiles comprise time averages for said plurality of callers while previously on hold at at least one call center; and

estimating a wait time for a particular caller waiting in a hold queue from among said plurality of callers according to said time averages for said plurality of callers.

13. The method for estimating wait times at a call center according to claim 12, wherein said plurality of caller profiles are received from at least one profile server, wherein said at least one profile server is accessible to a plurality of call centers.

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14. A system for estimating wait times within a hold queue, comprising:

a call center for receiving a plurality of calls;

means for receiving a plurality of calls at a call center, wherein each caller associated with a call from among said plurality of calls is identified by an authenticated caller identifier;

means for retrieving, for each caller according to said authenticated caller identifier, a caller profile from among a plurality of caller profiles, wherein each of said plurality of caller profiles indicates a previous call center usage history for each said caller;

means for estimating a plurality of call times individually for each of said plurality of calls within a call center based on said previous call center usage history for each said caller;

means for positioning a particular call received from a particular caller at said call center within a hold queue; and

means for estimating a wait time in said hold queue for said particular call according to said plurality of call times individually estimated for said plurality of calls within said call center.

15. The system for estimating wait times within a hold queue according to claim 14, wherein said means for estimating a plurality of call times further comprises:

means for estimating said plurality of call times according to at least one from among an average time per representative, an average time per caller, and an activity participated in by a selection of said plurality of callers waiting in said hold queue.

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16. The system for estimating wait times within a hold queue according to claim 15, wherein said average time per representative is further specified according to at least one from among a time of day and a subject.
17. The system for estimating wait times within a hold queue according to claim 15, wherein said average time per caller is further specified according to at least one from among an average time with representatives across a plurality of call centers, an average time with a particular representative, an average time for a subject, and an average time of a total call within said call center.
18. The system for estimating wait times within a hold queue according to claim 15, wherein said activity participated in by a selection of said plurality of callers comprises at least one from among a third party call, a competition, a survey, an expert session, and an entertainment service.
19. Canceled.
20. The system for estimating wait times within a hold queue according to claim 14, further comprising:
- means for publishing said wait time to an interface selected by said caller.
21. The system for estimating wait times within a hold queue according to claim 20, wherein said means for publishing said wait time further comprises:
- means for publishing a plurality of criteria utilized to estimated said plurality of call times.
22. The system for estimating wait times within a hold queue according to claim 14, wherein a selection of said plurality of calls are currently waiting in said hold queue.

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23. The system for estimating wait times within a hold queue according to claim 14, wherein a selection of said plurality of calls are currently being assisted by a plurality of representatives within said call center.

24. The system for estimating wait times within a hold queue according to claim 14, further comprising:

means for updating at least one caller profile server according to a session for said particular call according to said authenticated identifier for said particular caller, wherein said at least one caller profile server maintains a plurality of caller profiles stored according to a plurality of authenticated identifiers for compiling information about sessions at at least one call center.

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25. A computer program product for estimating wait times within a hold queue, said computer program product comprising:

a recording medium;

means, recorded on said recording medium, for receiving a plurality of calls at a call center, wherein each caller associated with a call from among said plurality of calls is identified by an authenticated caller identifier;

means, recorded on said recording medium, for retrieving, for each caller according to said authenticated caller identifier, a caller profile from among a plurality of caller profiles, wherein each of said plurality of caller profiles indicates a previous call center usage history for each said caller;

means, recorded on said recording medium, for estimating a plurality of call times individually for each of said plurality of calls based on said previous call center usage history for each said caller;

means, recorded on said recording medium, for positioning a particular call received from a particular caller at said call center within a hold queue; and

means, recorded on said recording medium, for estimating a wait time in said hold queue for said particular call according to said plurality of call times individually estimated for said plurality of calls within said call center.

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26. The computer program product for estimating wait times within a hold queue according to claim 25, wherein said means for estimating a plurality of call times further comprise:

means, recorded on said recording medium, for estimating said plurality of call times according to at least one from among an average time per representative, an average time per caller, and an activity participated in by a selection of said plurality of callers waiting in said hold queue.

27. Canceled.

28. The computer program product for estimating wait times within a hold queue according to claim 25, further comprising:

means, recorded on said recording medium, for controlling output of said wait time to an interface selected by said caller.

29. The computer program product for estimating wait times within a hold queue according to claim 28, wherein said means for publishing said wait time further comprises:

means, recorded on said recording medium, for controlling output of a plurality of criteria utilized to estimated said plurality of call times.

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30. The computer program product for estimating wait times within a hold queue according to claim 25, further comprising:

means, recorded on said recording medium, for updating at least one caller profile server according to a session for said particular call according to said authenticated identifier for said particular caller, wherein said at least one caller profile server maintains a plurality of caller profiles stored according to a plurality of authenticated identifiers for compiling information about sessions at at least one call center.

34. The method according to claim 1 for estimating wait times within a hold queue wherein each said authenticated caller identifier is voice authenticated.

35. The system according to claim 14 for estimating wait times within a hold queue wherein each said authenticated caller identifier is voice authenticated.

36. The computer program product according to claim 25 for estimating wait times within a hold queue wherein each said authenticated caller identifier is voice authenticated.

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IX. Evidence Appendix

There is no evidence submitted pursuant to §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner that is relied upon by Appellants in the appeal.

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X. Related Proceedings Appendix

There are no decisions rendered by a court or the Board in any related appeals.